

Oxidase of *Medicago*.—EULER and BOLIN²⁹ claim to have succeeded in purifying and determining the chemical constitution of the oxidase (laccase) of *Medicago*. The purification was greatly furthered by the discovery that the substance was not sensitive to high temperatures. By boiling the extracted juice, the protein bodies were thrown down, and by treatment with animal charcoal, the dextrin-like substances withdrawn. They concluded that this pure laccase consists of mono-, di-, and tribasic aliphatic oxy-acids. The presence of the citrate, malate, and mesoxalate of this base was certainly established, and it is almost certain that the glycolate is a fourth salt.

They have already³⁰ shown that various salts of this type will produce oxidations qualitatively and quantitatively, similar to those produced by the laccase of *Medicago*. They now extend these tests to the new salts found, and to mixtures of the salts, and find marked agreement between the oxidations produced by them and those produced by laccase.—WILLIAM CROCKER.

Origin of the cell wall.—In an extended paper on vegetative cell division in the higher plants, POSTMA³¹ pays particular attention to the origin and development of the cell wall. Half of the paper consists of an excellent presentation and discussion of the literature, while the writer's own researches deal with the stomata of *Aneimia fraxinifolia*, root tips of *Allium Cepa*, and stem tips of *Psilotum triquetrum*. In case of the peculiar, isolated stomata of *Aneimia*, the cell wall is formed as in other vegetative cells, and consequently the problem in the three forms is much the same. While the writer finds that the cell wall arises in greater or less connection with the spindle, the material of the spindle is not believed to furnish all the material for the beginning of the wall. A mother *Hautschicht* splitting into two daughter *Hautschichts*, as sometimes described, could not be found. A single plate with rather small figures is hardly sufficient to illustrate so difficult and so important a problem.—CHARLES J. CHAMBERLAIN.

Seedlings of monocotyledons.—EVANS³² has undertaken a somewhat extensive study of monocotyledonous seedlings and also of the mature embryos. Not only has the structure at various stages been investigated, but also the effect of deep and shallow seed-sowing. The present paper is a record of some of the results, chiefly those in reference to the "plumular meristem"; and a final paper will review all the facts and suggest the conclusions. The facts are to be used, in part, in connection with the question as to the origin of the lateral position of

²⁹ EULER, H., AND BOLIN, IVAN, Ueber die Reindarstellung und die chemische Konstitution einer Oxydase. *Arkiv for Kemi, Mineralogi, och Geologi* 3:000, 1909.

³⁰ ———, *Zeit. Physiol. Chem.* 51:80, 1908.

³¹ POSTMA, G., *Bigdrage tot de Kennis van de vegetatieve celdeling bij de hogere plants*. Dissertation. pp. 117. *pl. I*. Groningen: M. de Waal, 1909.

³² EVANS, W. EDGAR, On the further development during germination of monocotylous embryos; with special reference to their plumular meristem. *Notes Roy. Bot. Gard. Edinburg* No. 21:1-21. *pls. 53, 54. figs. 8*. 1909.